



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/753,029	01/05/2004	Shyu Jin-Cherng	OR0327IT	7076

22192 7590 11/17/2004

LAW OFFICE OF LIAUH & ASSOC.
4224 WAIALAE AVE
STE 5-388
HONOLULU, HI 96816

EXAMINER

MCKINNON, TERRELL L

ART UNIT	PAPER NUMBER
----------	--------------

3743

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/753,029

Applicant(s)

JIN-CHERNG ET AL.

Examiner

Terrell L Mckinnon

Art Unit

3743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-8 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 05 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Amendment

Receipt is acknowledged of applicant's amendment filed August 23, 2004. Claims 1-7 and newly added claim 8 are pending and an action on the merits is as follows.

Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the following grounds of rejection.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujikura (JP 2002-310222).

Fujikura discloses a heat pipe comprising all of the applicant's claimed and disclosed limitations of the instant invention.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 3743

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujikura (JP 2002-310222) in view of Fujikura (JP 2002-62067).

Fujikura's ('222) invention discloses all of the claimed limitations from above except for a plurality of wick heat conduction pillars are provided with a structures whereby the wick structures serve to enhance the evaporation-condensation cycle; the wick structures are of a porous medium made of a sintered metal powder; the wick structures are made of mesh or metal spring; and the wick structures take a grooved or porous form by the heat conduction pillars itself.

5. However, Fujikura ('067) teaches the use of a plurality of wick heat conduction pillars (7) provided with a structures whereby the wick structures serve to enhance the evaporation-condensation cycle; the wick structures are of a porous medium made of a sintered metal powder; the wick structures are made of mesh or metal spring; and the wick structures take a grooved or porous form by the heat conduction pillars itself.

Given the teachings of Fujikura ('067), it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the heat pipe of Fujikura ('026) with a plurality of wick heat conduction pillars provided with a structure whereby the wick structures serve to enhance the evaporation-condensation cycle; the wick structures are of a porous medium made of a sintered metal powder; and the wick structures are made of mesh or metal spring; and the wick structures take a grooved or porous form by the heat conduction pillars itself.

Doing so would provide improve the heat transfer capability of the heat pipe.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references are cited for disclosing related limitations of the applicant's claimed and disclosed invention. Benson et al. discloses the very well known characteristic of a heat pipe that cools hot spots from a heat generated device (column 5, lines 28-33); and Lindemuth et al. (U.S. 2004/0069455) also discloses a heat pipe that cools hot spots.

Response to Arguments

Applicant's arguments filed August 23, 2004 have been fully considered but they are not persuasive.

Applicant's states, " the pillars taught in the Fujikura (JP 2002-310222) reference are to provide structural support. The Fujikura (JP 2002-310222) reference never taught or suggested providing heat conduction pillars, which are disposed at or around heat spot. The Fujikura (JP 2002-62067) reference taught the use of a pillar-like wick structure, but Fujikura (JP 2002-310222) reference it never taught or suggested using any heat conduction pillars. A wick structure, because of its porous structure, is a poor heat conductor."

Fujikura (JP 2002-310222) invention discloses structure support pillars (9), also the pillars are disposed at or around a hot spot region of the heat-generating device (3). It is very inherent that the pillar is a support structure and a conductive member for aiding in transferring heat through the heat pipe.

Applicant is advised to review Benson et al. (column 5, lines 28-33) and Lindemuth et al. for heat pipe that contain support structures that aid in heat conduction.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terrell L Mckinnon whose telephone number is 703-305-0059. The examiner can normally be reached on Monday -Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennett can be reached on 308-0101. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3743

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Terrell L McKinnon
Primary Examiner
Art Unit 3743
November 16, 2004